Strategy Research Project

BLENDED LEARNING: THE ARMY'S FUTURE IN EDUCATION, TRAINING, AND DEVELOPMENT

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ABSTRACT

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The U.S. Army consists of new, smaller, lightweight, and more technically sophisticated personnel and units. The wars of the 21st Century and beyond will increasingly be fought against non-state actors and will thus depend more on technology and information and the use of untraditional methods. Based on this notion the Army's system to educate, train, and develop its members, needs to strongly incorporate contemporary pedagogical methods such as blended learning. Furthermore, failing to strategically plan to leverage current learning technology, specifically within the institutional, operational, and self-development domains will rapidly reduce the Army's ability to prepare for future conflict. The purpose of this strategy research paper is to show how a blended learning approach to education and training within the U.S. Army provides the greatest return on investment.

BLENDED LEARNING: THE ARMY'S FUTURE IN EDUCATION, TRAINING, AND DEVELOPMENT

Today, the U.S. Army faces a significant challenge of being able to fulfill the Joint Vision of 2020 which states that in achieving this vision the Department of Defense (DOD) is to be dedicated individuals and innovative organizations transforming the Joint Force for the 21st Century to achieve full spectrum dominance by being persuasive in peace, decisive in war, and preeminent in any form of conflict.[1] Answering the call of Joint Vision 2020, the U.S. Army's vision focuses on remaining the pre-eminent power force on Earth, one that continues to be ready and relevant to meet the challenges of an ever-evolving security environment.[2] Through its current and future efforts, the Army continues to transform to a versatile, expeditionary, agile, lethal, sustainable, and interoperable land force to face unknown challenges of the 21st Century.[3] A major fear, among senior Army leaders, is that the service will fail to reinvigorate the way its leaders and members develop and learn. As a result, the U.S. Army will be incapable of providing full spectrum dominance and defend the nation.

Multiple studies have shown evidence that the U.S. Army's education and training models have not kept pace with the rapidly changing environment and the DOD lacks leaders that are developed for strategic level responsibilities. Furthermore, the U.S. Army consists of new smaller, lightweight and more technically sophisticated personnel and units that force a plethora of situations that have strategic consequences. These situations are exacerbated by decisions ordinarily made at the strategic level that are now being made at lower levels because every tactical situation encountered has the potentiality of becoming a strategic one. The wars of the 21st Century and beyond

will increasingly be fought against non-state actors and will thus depend more on technology and information and untraditional methods. These challenges coupled with an unwillingness to invest greater in education and training methods is largely due to the fear of change and increasing fiscal constraints. Therefore, the Army needs better and improved education, training, and developmental methods or the potential for catastrophic failure for the Army's future is inevitable. Based on these notions, the U.S. Army's system to train, educate and develop its member's needs to strongly incorporate contemporary pedagogical methods such as blended learning (BL)[4] which is the thoughtful fusion of face-to-face (f2f) and online learning experiences or an environment that is created when portions of instruction are conducted f2f while other parts are conducted via a non-traditional method or with the use of some kind of technology. Furthermore, failing to strategically plan to leverage current learning technology such as the BL approach, specifically within the training, education and development domains will drive the U.S. Army into irrelevancy. As a modern learning methodology, BL has the ability to shape effectively the strategic environment with better developed, educated, and trained soldiers and civilians. Furthermore, those who truly use and incorporate the BL method for their organizations have a greater ability to shape the strategic environment. This method supports the argument that those with the best developmental practices have the greatest ability to influence the strategic environment. Organizations that capitalize on the best developmental methods shape the leaders that then can more effectively influence the environment at all levels.

Blended learning is adaptive enough to respond to today's environment to best develop, educate, and train strategic leaders to effectively engage and shape events.

Blended learning further closes the gap between the theory and application debate. This method is much more student, versus faculty centered, leading to more effective leaders educated to address the ill-structured problems realistically occurring in today's rapidly changing environment.

The purpose of this paper is to show how the BL approach, to training and education within the U.S. Army, provides the most effective method of development as well as the greatest return on investment (ROI). If the U.S. Army, specifically, the Training and Doctrine Command (TRADOC) fails to strategically plan and more aggressively implement a BL model across the U.S. Army, soldiers and civilians will be less effective to meet future national security challenges. Simply put, failing to incorporate aggressively BL through strategic planning to leverage current educational technologies, within TRADOC will drive the U.S. Army into irrelevancy.

Addressing this argument will be accomplished by first recognizing the context of the changing world, then by addressing the mission facing the U.S. Army, and then by explaining what BL is and how and why it is the most effective method to develop, educate, and train our leaders today. Finally, this work will review the steps the U.S. Army is already taking to more fully incorporate the BL approach, examine what needs to be done, and what all Army leaders can do to best support greater BL use.

Context and the Changing World

Efforts to adapt to a changing world are not new. In 2005, Secretary of Defense Donald Rumsfeld attempted, to evolve and change the military culture with his "Blueprint for Change" described here within four pillars; 1) alertness to the future ahead, 2) agility in how the department responds to threats and opportunities, 3)

adaptability in what the department actually does, and 4) alignment around a clear mission.[5] Achieving Rumsfeld's four pillars clearly underscores the importance of development and education. Ironically, at the time of its publication release, the document attacked the U.S. Military's traditional developmental methods and questioned their relevance. Rumsfeld's efforts have been carried on through today with the current Secretary of Defense Robert Gates and addressed in the 2008 National Defense Strategy. Specifically, Gates states that the implementation of any strategy is predicated on developing, maintaining, and where possible, expanding the means required to execute its objectives within resource constraints.[6] If this strategy is to succeed, it once again supports the necessity of a versatile and adjustable ways of effective personnel development.

Throughout colleges and universities in the world, technology is rapidly changing the way faculty members teach and students learn. Academic leaders and administrators have changed their institution's learning environments to provide a quality education and to overcome potential failure. Advancing technology is attracting more colleges and universities to enhance student access to programs and improved learning.[7] However, as efficient as technology initiatives may seem, they come at a significant price and a greater one if not properly planned for especially within the Army. This becomes an issue for strategic leaders and academic administrators because others see technology as the solution for budget cuts when in fact it may cost the institution more in terms of technological infrastructure.[8] To combat these concerns the faculty, staff and administrators need a better understanding of the capabilities educational technology presents especially for those courses and programs traditionally

delivered in f2f or brick and mortar venues. Though there is a significant amount of research on the subject of educational technology, specifically BL,[9] there seems to be more attention paid to economic versus academic impact.[10] The economic attention paid to the use of technology in higher educational institutions seems to be warranted because if college and university leaders fail to effectively plan regarding the use of technology, they will end up spending more money trying to fix and resolve the problems that the technology caused.[11] Current economic conditions and changes in the academic marketplace as well as DOD requirements are causing institutions to consider restructuring their academic programs. Although often necessary, these changes are never easy because so much is at stake, including faculty positions, scarce resources, the program's reputation and the matter of change itself. However, for DOD, a failure to educate properly can lead to a higher cost, the loss of lives, and not achieving national objectives.

Considering the volatile, uncertain, complex and ambiguous (VUCA) environment[12] of today, leveraging the most effective developmental methods such as BL may be well worth the investment. Considering the environment of the information age only reinforces the importance of leaders to anticipate change and manage risk. Using the most flexible and adaptable approach for development better enables leaders to react and plan for the challenge of today's complexities, by not discounting the most effective learning technology, but by exploiting it. However, considering the myriad organizations that exist and the cultures they include, adds to the VUCA environment. Nevertheless, exploiting the most effective learning technologies such as BL also can further build stronger coalitions between the existing cultural differences within the

military as well as between interagency organizations and other countries. Building stronger coalitions between existing cultures and organizations has already been evidenced by such large global organizations such as the Oracle Corporation and Cisco Systems Networking Academy program.[13] It is worth considering the BL method to achieve a greater shared understanding between cultures, because in 1986, the Department of Defense was impacted by the Gold Water-Nichols Act forcing the military services to jointly operate.[14] It is also important to recognize this event because the military is today still attempting to operate effectively as a joint force without greater incorporation of newer technologies and methods. The reluctance to implement newer technologies or methods stems from the inertia generated by differing service cultures achieving shared understanding and or coming to agreement. Beyond the differing military service cultures exists the diversities between governmental and private organizations. Exacerbating the notion of diversity even further are the significant differences in cultures between countries. Blended learning and the use of technology forces change and exposes cultures into different perspectives. Recognizing cultural differences from all aspects is important because different cultures may be more or less risk adverse when it comes to using the latest and most effective learning technologies. This presents the paradox because the learning technology that a culture or organization may resist using, may be the exact learning technology it needs to develop its people to overcome the challenges it may face. Interestingly, this paradox not only exists regarding cultural differences, but is also present with people of varying ages that range across the generational spectrum.

Generational differences regarding technology add to the VUCA environment by creating a challenge to provide an educational method to those ages that expect the latest technologies and to those that have never used it but are still in charge of or impact decision making. Once again this underscores the value in providing an approach using the BL method to accommodate varying generations. According to EDUCAUSE, a nonprofit association whose mission is to advance higher education by promoting the intelligent use of information technology, today's student is increasingly more diverse than ever before.[15] Younger students are in many cases more technologically proficient than their faculty with 80 percent reporting that they have a computer by the time they reach college.[16] Many of these younger students have already "surfed" the Internet for schoolwork purposes (78 percent) as well as having used e-mail or social networking systems. They are approaching college courses already experienced in educational technologies that use the Web.[17] Considering the research that indicates that more people are now using and expect educational technologies that use the World Wide Web, it is easy to deduce how the world is becoming more interconnected.

Whether people like it or not, the world as we know it is interconnected. The most applicable consideration here is the thought regarding the science of ecology[18] and how everything has an impact in the environment. As much as efforts can be focused on the effectiveness to plan strategically for the use of learning technologies, one can quickly realize that technology, learning or otherwise, actually overlaps and impacts almost every other associated area within an organization, country, or culture.

The Public Broadcasting Station's video documentary program Frontline aired a report titled *digital_nation; life on the virtual frontier*.[19] This report offers five perspectives affecting life today; 1) living faster, 2) relationships, 3) waging war, 4) virtual worlds, and 5) learning.[20] After watching and reading this report, it is clear to see that the use of technology is globally imbedded; unless people work to better understand and embrace it, the possibility of individuals, organizations, or even the nation may become operationally irrelevant. This perspective presents, yet another paradox that technology creates. Logically, one can conclude that the more efficient capability technology provides, the more we can accomplish, which in turn may actually impact our ability to accomplish ones goals. This technology paradox is also referred to as the productivity paradox.[21] This factor receives significant attention as identified in the Frontline documentary[22] previously mentioned but seems to fall short of anything conclusive evidenced by the continual global use, reliance, and desire to use more.

Further evidence of the technology paradox reported by the Frontline documentary is openly observable in how social media networks such as *Facebook*[23] are being used now more than ever and are intricately linked throughout our society to include the military environment. Underscoring the acceptance, evolution and importance of social media, the Army has launched its own social media management site and organization in 2010.[24] Embracing newer technological ways like social media expands and generates changes in other fields, such as education. When observing the changes in the world today, an area that probably provides the greatest evidence of how technology has changed our global environment is within education and training field.

In the context of a rapidly changing world environment and to be more effective, leaders should strive to better understand the impact of learning technologies. According to a 2009 Department of Education study, “Students who took all or part of their class online performed better, on average, than those taking the same course through traditional face-to-face instruction. Students who mix online learning with traditional coursework such as BL do even better.”[25] The more people learn and evolve, the more likely people are to use alternative methods to continue expanding their knowledge. This is apparent today and holds true regarding the use of learning technologies. The research indicates that learning technologies such as blogs, wikis, instant messaging, social bookmarks, podcasts, and vodcasts are on the rise in academic settings.[26] The world and environment continues to grow and change at a rapid pace because the ability to design, develop, and use newer learning technologies, such as the ones previously mentioned, and these emerging technologies have the potential to create more effective and engaging learning environments. However, it is important to note that learning technology can be defined as any tool or method requiring informed design and appropriate use in order to enhance one’s ability to learn.[27] This is a broad definition that logically implies that the use of learning technology should be as holistic a technology as possible.[28] If the Army understands the impact of learning technology, then it can more effectively and efficiently adapt to grow and keep pace and defeat its adversaries. Achieving a better understanding of learning technologies can better prepare leaders to accomplish the daunting mission facing the Army today.

Mission facing the U.S. Army

Considering the rapidly changing world and today's environment, the Army is faced with a daunting challenge of accomplishing any missions providing full spectrum dominance. Furthermore, according to the Leader Development Strategy for a 21st Century Army,[29] the Army is tasked to overmatch the enemy's training with its training and with the development of its leaders. However, for developmental programs providing education and training to remain relevant either financially or educationally, the Army's strategic leaders and academic leadership need to use and incorporate a method that delivers a long-term ROI.[30] Accomplishing the best return for developmental program investment leads to the use and incorporation of appropriate educational technologies that rely greater on web-based delivery. This stream of thought represents a paradigm shift within academia as well as the American military culture especially for traditional f2f programs.

In his influential book, the *Structure of Scientific Revolutions*, Thomas Kuhn's work on paradigm shifts indicates, members of an established community work from a single paradigm or from a closely related set of issues and rarely do different communities investigate the same problems.[31] This being the case frustrates the different communities within a college or university because they are not tackling the same problem to move the institution forward in the same direction. The lack of agreement on the same problem or institutional outcome is the major struggle for leaders to progress education technology initiatives. Kuhn goes on to assert that social scientists tend to defend their choice of a research problem chiefly in terms of the social importance of achieving a solution.[32] This suggests that it is subjectivity that adds to the

confusion and hinders the ability of strategic and academic leaders to best focus efforts toward an agreed upon outcome. Nevertheless, one way to achieve the right balance of investment is through a strategic planning process that will naturally identify BL as the best approach to develop service members to operate in a VUCA environment as well as support the Army's mission and vision. However, the strategic planning process may possess quality principles that are not only part of personal philosophies, but can also underscore an organizational culture that uses scientific outcomes, measurement, systematic management techniques, and collaboration to achieve the mission of the institution.[33] In other words, even a seemingly solid strategic planning process such as the one used by the Army, may be flawed due to personal or organizational biases, risk aversion, and paradigms. This is not implying that a strategic planning process should not be used especially when implementing the most effective developmental methods, but should be used as objectively as possible and with a great amount of awareness. Furthermore, this generates the debate on how far the U.S. Army should rely on educational technologies.

In Steven Jones article, *Improving Accountability for Effective Command Climate: A Strategic Imperative*, he asserts that "In spite of all the attention paid to technology, the success of Army Transformation for the 21st Century almost entirely depends upon the adaptability and effectiveness of the human component of Army organizations."[34] As former Secretary of the Army, Thomas White stated, "Hardware is the easy part. The hard part is the intellectual and cultural changes and training needed before the hardware shows up."[35] Paradoxically though, how can the Army attain the intellectual and cultural changes and training needed before the hardware shows up if it does not

have the ways or means to accomplish the development required. Unfortunately, those opposed to U.S. interests do not tolerate such debates and use the most effective ways to develop their members and organizations to achieve their ends.

Potential American foes already grasp the importance of leveraging the most effective educational technologies. Examples of our enemy using BL are openly visible. This can be seen through the use of web technologies recruiting and training members in extremist and terrorist methods, blended with f2f training camps. Web technologies provide global reach and is typically a precursor for knowledge before attending f2f training camps or other non-traditional methods. After the majority of Al-Qaida training camps were destroyed in 2002, the New York Times reported that parts of the Al-Qaida training manual or "Encyclopedia," were discovered in four different camps.[36] The encyclopedia included instructions on how to make explosives, render first aid, use small arms such as pistols, machine guns and armor-piercing weapons, grenades and mines, conduct espionage and acts of sabotage, use of secure communications, conduct brainwashing, perform reconnaissance, how to attack, the history and design of tanks, maintain physical fitness, land navigate, and the use of artillery guns etc.[37] In 2003, the Al-Qaida training encyclopedia was transferred to the internet opening their techniques to anyone with internet access and fully taking advantage of a BL approach.[38] There is further evidence of other militant type organizations leveraging BL to their advantage. One of many examples is the Gaza 2008 conflict.[39] During this conflict, militants were capable of using modern and sophisticated equipment due to the development provided through a BL method. Using a traditional f2f method of instruction to learn the use of advanced weapon technologies would have taken too much time and

would have been easier for the Israeli Defense Forces to exploit and defeat. The use of BL methods by those opposed to U.S. interests represents a contemporary way of thinking that the Army is continually trying to instill in its leaders, critical adaptive thinking.

Effectively accomplishing the Army's mission requires leaders who can critically and creatively think. Specifically, if our military is to truly achieve full spectrum dominance, the Army requires leaders who know how to think versus what to think. According to Dr. Richard Paul and Dr. Linda Elder, critical thinking is the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and evaluating information gathered from or generated by observation, experience, reflection, reasoning, or communication, as a guide to belief and action.[40] It is apparent from Paul and Elder's definition that instructional methods offering the various facets described may potentially provide greater support for a leader's ability to critically think. Blended learning, based on its dynamic equation of multiple instructional combinations, widens the perspective aperture for Army leaders regarding challenges they may face through networked relationships and other opportunities. Similar to the opportunities BL offers for the development of critical thinkers, this method also presents more effective ways to develop leaders, individually, collectively, and at all levels evidenced by the Oracle Corporation's Leaders Track as well as IBM's Basic Blue for Managers programs.[41]

The goal of the Army's leader development strategy is to educate, train, and provide experiences to progressively develop leaders to prevail in full spectrum operations in a 21st Century security environment and to lead the Army Enterprise.[42]

Similar to the many other challenges the Army is faced with today and the future, effectively developing leaders to confront an uncertain future is a tall order. The Army recognizes that “In this era of persistent conflict, the Army must increase efforts to develop each of its leaders, and ensure that it is managing the most talented leaders to lead the U.S. Army into the future.”[43] If the Army’s most important core competency is leader development, it must seek the most effective methods of development to produce confident, competent, versatile leaders for the 21st Century Army. The Army can meet the threats it faces as well as develop a more effective force capable of full spectrum dominance through the use of blended learning.

Blended Learning

Blended learning refers to a mixing of different learning environments via any combination of instructional methods that provides the most effective learning environment. A more common definition of BL is the thoughtful fusion of f2f and online learning experiences or an environment that is created when portions of instruction are conducted f2f while other parts are conducted via a non traditional method or with the use of some kind of technology.[44] There are typically four major areas of instruction each consisting of numerous subordinate methods that can be blended in any number of combinations with consideration to students, faculty, infrastructure, and resources (see Figure 1).

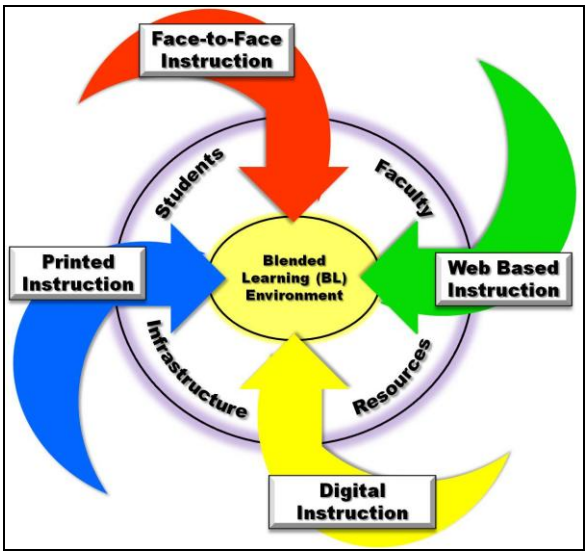

Figure 1

There are numerous terms associated with instructional and developmental methodologies. The relatively new interest in BL further complicates the existing instructional systems design lexicon. Though there are numerous subordinate methods within each of the four major areas of instruction that may be part of a BL strategy such as, Distance Learning, Distributed Learning, Traditional Learning, Brick and Mortar (denotes student attendance in an actual building for instruction), f2f, Computer Based Training (CBT) and others. These methodologies are not the same and should not be used interchangeably with BL. These other methods of instruction are important to know to fully grasp the possible BL combinations that can be used for the most effective program taking into consideration objective of the course or program, faculty expertise, student ability, and the infrastructure and available resources.

A particularly helpful strategic planning method used in identifying areas for development is a strengths, weaknesses, opportunities, and threats (SWOT) analysis.[45] A fundamental SWOT analysis applied to BL as seen in Figure 2 simply displays the effectiveness and challenges associated with this method of instruction.

Strengths	Weaknesses
• Improved learning outcomes • Enhanced opportunities for teacher-student interaction • Increased student engagement in learning • Greater flexibility and access (students) • Added flexibility in the teaching and learning environment (faculty)	• Time management for redesign • Taking responsibility for independent learning • Using sophisticated technologies • Support and resources for course redesign • Acquiring new teaching and technology skills
Opportunities	**Threats**
• Continuous improvement • Enhance an institutions reputation • Expand access to an institution's educational offerings • Reduce operating costs • Maximize classroom time and reduce seat time	• Cyber Terrorism • Physical and manmade threats - EMP • Lack of time to develop • Proper alignment of blended learning with institutional goals and priorities • Resistance to organizational change • Lack of organizational structure and experience with collaboration and partnerships

Figure 2

Benefits of BL

Blended learning potentially provides the best method to educate and train U.S. Army members to conduct the Army's Operating Concept. Students mixing online learning with traditional coursework within a blended learning approach have been found to do better than traditional "brick and mortar" schools.[46] Blended learning enables leaders and commanders to assume more operational risk because formal education and application is more rapid and effective than conventional training methods. Because much of the fundamental information can be front loaded via web based instruction, time can be maximized for higher level learning opportunities within the classroom. This means that less time is required in resident education and training programs because the time ordinarily used to transmit and "cover" basic information was already accomplished in another way. It can also screen people out or place students in the appropriate levels of school. Furthermore, BL potentially provides a network for greater perspectives and reach back for future inquiry and research. If implemented effectively, BL may accomplish more to train and educate a greater load in

less time to execute the Army Operating Concept.[47] In other words, BL's flexibility supports the Army Force Generating Model (ARFORGEN)[48] to more rapidly educate, train, and develops soldiers to reduce required dwell times. According to the Army's Training and Leader Development Army Regulation 350-1, the service's training challenge is to optimize, synchronize, and support training in schools, training in units, and self development training to produce forces capable of responding across the spectrum of operations.[49] This becomes more important and complex when faced with the challenge of educating and training reserve component members that have by law a limited amount of days available for such preparation.

Certainly one can see from the SWOT analysis that BL is not a panacea or solution to the military's education and training environments. Like any other method or system, BL should be considered and implemented through an appropriate instructional design process coupled with proper strategic planning. Without these considerations, BL as a method reverts to any other developmental fad and will add no value to the Army. One can argue that certain parts of the blended approach such as distance learning may not facilitate a large number of important, although perhaps non-academic, goals of traditional style programs.[50] This is where a BL approach can best provide a design that can still achieve the development of social norms, social networking, interpersonal relationships, family welfare and health assessments that would otherwise be challenging if not impossible to accomplish.

There has been significant research conducted outside the Army that indicates that a BL approach is the way of the future.[51] There are already multiple examples of BL being used throughout a wide spectrum of educational and developmental institutions

world-wide.[52] Educational and developmental institutions overwhelmingly choose BL for three main reasons: (1) improved pedagogy, (2) increased access and flexibility, and (3) increased cost effectiveness.[53] Though not as aggressive as an approach as it could take regarding the use of BL, the Army has taken notice of educational technologies particularly with its Army centric approach.[54]

General George C. Marshall, former Chief of Staff of the U.S. Army and Secretary of State under Presidents Franklin Roosevelt and Harry Truman, believed in universal military training during his tenure[55] and most likely would see the use of a BL approach as a means and ways of achieving that end. Though the Army has seen this already to some extent, there is still a large amount of disparity regarding the standards that education and training provides. Through a dynamic combination of methods, using BL presents a reality of standardization within the Army that provides real time developmental opportunities at all levels and locations. Underpinning the numerous educational institutions within the Army already using BL, is the U.S. Army's training doctrine recognizing the importance of this approach. Field Manual (FM) 7-0, Training for Full Spectrum Operations recognizes fully considers the strategic landscape and recognizes that today's operational environments are being shaped by greater advent of technologies in areas such as science, information, transportation as well as the acceleration of the global economic community.[56] Most importantly, FM 7-0 recognizes the importance of further developing and exploiting educational technologies such as BL because the Army views effective training as the cornerstone of operational success.[57] A significant challenge identified within FM 7-0 is the planning aspect of education and training particularly associated with costing within DOD and the Army.

Due to the size and scope of DOD and the Army, an intricate budgetary system is used. Specifically, the Planning, Programming, Budgeting, and Execution System (PPBES)[58] is used which takes tremendous lead time and management to conduct. So, even if BL is found to be more cost effective, bureaucratic inertia is slow and painful to adopt BL. This creates the problem that by the time a BL system may be approved, technology may have already evolved. Furthermore, the PPBES approval process involves people that may need to be convinced that new methods such as BL are the right investment. So even when approval is obtained, it takes a significant amount of time to progress through the approval, appropriation and implementation process.

According to J. Oberlin,[59] a greatly misunderstood aspect of managing information technology is its economics. This misunderstood aspect of managing educational technology not only has an economic impact but an instructional design one as well, specifically regarding virtual leader development courses and programs. The rate of technological advancements continues to accelerate, its demand is growing, the standards and required infrastructure is changing daily, and though prices for soft and hardware are falling, total costs are growing because of the rate of change and inability to predict future requirements.[60] Due to this rapid growth, contemporary and available research is extremely shallow especially in those areas that use a BL approach. The lack of research makes strategic leaders and academic administrators within the Army much more fiscally conservative and more risk adverse to effectively plan strategically. As Oberlin[61] reminds us, understanding the economics of information technology is a necessary first step in developing sound financial strategies to accommodate technological advancement in the college or university. Interestingly, studies conducted

by B. Lewis, C. Massey, and R. Smith,[62] show that many institutions with long-range or strategic planning processes did not successfully plan for information technology. Martin Ringle argues that, with technology costs and revenue opportunities changing rapidly, colleges' future financial strategies concerning technology will have to be more agile and adaptable than ever.[63] The Army is no different in this aspect. Most academic leaders within the Army would agree that agile and adaptable financial strategies are important for the successful implementation, use, and efficiencies technology provides within developmental institutions. However, another critical piece to address especially within the military culture is the efficiencies compared to the effectiveness for learning.

Gerald Van Dusen asserts that implementing technology in the classroom to reduce costs is putting the cart before the horse.[64] He thinks that focusing on how technology can enhance learning instead, may yield greater economic benefits down the road because no one really knows for sure if technology enhances a more effective learning experience while in the name of efficiency. Marilyn Amey and Kim Van DerLinden,[65] address this concern regarding the worries and issues about the potential for faculty overload and the need for faculty development both of which directly impact the academic environment. Faculty members may naively spread themselves too thin, thinking they can handle more because of newer technological capabilities. When this occurs coupled with a lacking of sufficient education on how to most effectively use the technology, then student outcomes are affected and academic quality can decrease. As rapidly as technology is advancing, there is still a major lack of awareness as well as misunderstanding of the efficiencies and effectiveness it provides. This preceding point underscores the rationale of why a BL approach is more suitable for the Army. Although

survey respondents to the 2004 Campus Computing Survey acknowledge the need to assess and evaluate campus technology initiatives and services, few institutions have developed technology assessment programs.[66] This underscores the point that for technology to be implemented and used successfully, Army leaders need to effectively and strategically plan. Further research is required to address the issues associated with academic leadership and its ability to plan for educational technology especially within the military environment.

In light of growing budget issues, our nation's resources are finite. When making cost decisions for the Army, leaders are faced with decisions as to where to invest resources where there is the least risk. This is especially challenging when considering the Army's current operations and supporting soldiers in the field. However, this mindset needs to change from short term risk to long term ROI because more effective development methods such as BL may potentially solve some of the problems that the U.S. Army currently faces. However, it is argued that more organizations do not invest in development because there are no ways to measure such returns especially long-term ones. Yet, recent research indicates that there is a technique for assessing the fiscal impact of training specifically estimating return on leadership development investment.[67] Regardless of the state of the American economy, investing in leadership development as well as all other forms of education, training and development is vital for the Army. Army leaders need to take more risk and invest greater in developmental programs especially those using a BL method because the long-term return will be well worth short-term cost. Based on the efficiency and effectiveness that BL provides, there

are some educational and developmental institutions within the Army already leveraging it.

Recognizing the impending operational and budgetary challenges facing the U.S. Army, numerous developmental institutions are already effectively using BL in their programs at all levels. Institutions such as the Command and General Staff College (CGSC), Army Management Staff College (AMSC), and the U.S. Army War College (USAWC) are using BL and have found no degradation of learning, but are providing greater flexibility to students, specifically in each of their programs that combine web based and in resident instruction. So if the U.S. Army is already using BL and taking further actions to implement approaches in the way it develops its members, what more can be done?

The Way Ahead

If we are to be a force that can achieve a standard of operational adaptability for the nation, as General Martin Dempsey, current TRADOC Commanding General and future Chief of Staff of the Army, then we need to have a strategy to address the changes we face.[68] To accomplish their goal requires further change in light of developmental process that has successfully worked for decades as well as operating in a complex environment as described previously. The Army has taken steps to implement and use a blended approach to education and training. However, these efforts are still marred by bureaucratic inertia and the fear of doing something new. Army Transformation demands more effective organizations, and more fully adaptive and innovative leaders who exercise battle command by “understanding the distinction

between the art and science and integrating people and technology in a synergistic fashion."[69]

Historical tried-and-true practices are obstacles to continuous improvement because at the heart of the continuous improvement process is the matter of change.[70] Quite simply in order to improve the process, we must change it and the added aspect of educational technology makes this even more intricate. According to John Kotter, employees that are more comfortable with certainty and structure might thrive under a more standardized work process and possess an "if it is not broke do not fix it" mentality.[71] Furthermore, Ron Heifetz, Alexander Grashow, and Marty Linsky, assert that organizations are the way they are because people in authority and longtime employees want it that way.[72] There is a preference of a world that can be predicted, but at the same time where employees can then wring their hands about it. In addition, previous practices may have available data as evidence that back up claims that the current methods are operating and producing effective results. Interestingly, on the other hand, there are those that are more independent and may dislike the feeling of being micromanaged and resent feeling forced to do their work in specific ways. Just as a tried and true practice may be an obstacle to continuous improvement, these types of employees may also be an obstacle by not following the strategic plan. Considering these issues leads to the question, is planning for the greater use of a BL model within the Army development system worth its cost effectiveness?

Recognizing the challenges the Army faces in being the world's dominant full spectrum force, it has launched a campaign of learning providing the Army's intent and strategic plan of what needs to be accomplished. In October 2010, General Martin

Dempsey, formally set out a campaign to change the way the Army learns. Identifying the complexity of change as previously discussed, TRADOC's campaign of learning articulates the importance of the competitive security environment demanding that the Army prevail in the competitive learning environment. Furthermore, it provides easy to understand concepts communicating the objective to improve learning models by employing technology without sacrificing standards. Achieving the objective of properly utilizing technology will enable the Army to provide learning opportunities that are second to none over a course of a career. Maintaining the importance of BL, the Army's campaign of learning states that, "Continuous lifelong learning will require a blend of schoolhouse-delivered instruction with instruction delivered at the point of need." Though an important and necessary step, the Army's campaign of learning is only one part of the change process.

Regardless of how keen a leader's foresight based on available data may be, it is impossible for us to predict the future.[73] Considering the rapid pace of advancing technology, and if the future is unpredictable, then it is incredibly challenging to know for sure if the organizational vision is right and the mission is achieving the right objectives and goals. This is another example of why the strategic management process as described by Jan Freed and others, is important for Army strategic leaders when deciding on how to best implement educational technology.[74] Additionally, according to Freed, the power of using strategic planning comes from the synergy of the whole system linking the mission to outcomes.[75] However, this very principle compounds this topic specifically on how change is coupled with the innumerous educational technological aspects of incorporating the strategic planning and management

processes. When combined, the challenges of a paradigm shift and the impact on almost every other functional area to pinpoint as well as address all the relevant variables to effectively implement a strategic plan to achieve a quality culture to leverage the best blend of technology and f2f curricula is incredibly difficult.

Recognizing that the Army trains and educates over a half million individuals annually in a course-based, throughput-oriented system that provides the operational force with Soldiers and civilians, the Army Learning Concept (ALC) 2015 addresses the need to change this paradigm to more effectively support the Army's mission.[76] The ALC 2015 supports TRADOC's campaign of learning to move the Army into a 21st Century dominant full spectrum force. Most importantly, ALC 2015 defines and recognizes the efficiencies and effectiveness that BL can provide the Army. Though ALC 2015 recognizes the benefit BL provides, it places it as a smaller part of the Learner-Centric 2015 Learning Environment.[77] The author argues that the BL approach actually provides a method in which all the other parts of the Learner-Centric 2015 Learning Environment can be combined while still remaining learner centered. This is an important distinction, because without the parts of the Learner-Centric 2015 Learning Environment blended, they will be planned, programmed, and budgeted separately. Additionally, not designing the parts of a program that can be blended together creates gaps and disconnects. Nevertheless, it is important and a step in the right direction that ALC 2015 is recognizes the BL as an important part of the education, training, and developmental process. There are myriad other guiding strategies that underscore what the Army needs to do for the future such as the U.S. Army Modernization Strategy, the Army Operating Concept; 2016-2028, and the Army Leader Development Strategy.

Central to each of these guiding strategies is the thought and desire that the Army continues to leverage and adapt the most effective methods to accomplish the mission of providing full spectrum dominance. Adapting and incorporating BL methods is the right approach at the right time to best accomplish the Army's mission of providing full spectrum dominance. There is nothing unique about the BL approach that precludes its use throughout the Army. The BL method's strength is derived from its simplicity and applicability to any types of educational or training course within the institutional, operational and self-development domains.[78]

Though important, plans and documents are not enough to implement organizational change; it requires the actions of every organizational member at every level. The Army's senior leadership has taken the important steps of identifying the importance of implementing BL through a service wide campaign and supporting concepts such as ALC 2015, but for BL to truly take effect and be used requires every soldier and civilian at every level to recognize and embrace its ROI. Each and every member of the Army should make a plea that BL is the most effective and efficient developmental method and should be implemented aggressively throughout the entire organization.

Conclusion

Undeniably, technology can be a useful tool for supporting learning, as well as making administrative processes more efficient.[79] Though technology can be more efficient and in some cases more effective, it may cost more to implement and sustain and the benefits typically do not immediately show. However, Army leaders must work together to plan effectively to use the technology that best benefits the development or

at least identify where to use BL for soldiers and civilians as well as to maximize cost effectiveness. The use of technology is disparate across DOD and will continue to be that way due to the different acceptance and willingness to change. Until further research and studies are conducted regarding the pedagogical effectiveness technology has on colleges and universities, the debate will continue between academics and strategic leaders within the Army. The bottom line is that if the Army expects to realize the benefits technology provides, leaders need to more effectively strategically plan to implement a blended approach to achieve the biggest return on investment.

In order to appropriately explore these problems, more data and experience is required particularly from institutions that have effectively implemented educational technology (blended learning) programs via successful strategic planning. Specifically, leaders from these institutions should be surveyed to better understand not only their decisions, but their styles, and personalities. Furthermore, quantitative and qualitative studies on the subject of adult educational technology implementation should be used and a meta-analysis study would be conducted to update as well as further the contemporary knowledge and awareness of educational technology and how it is being implemented.

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